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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,050	10/10/2003	Thomas L. Treon	MIDTF / 351P2	3248
26875	7590	10/15/2004	EXAMINER	
WOOD, HERRON & EVANS, LLP			RO, BENTSU	
2700 CAREW TOWER			ART UNIT	
441 VINE STREET			PAPER NUMBER	
CINCINNATI, OH 45202			2837	

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/684,050

Applicant(s)

TREON, THOMAS L.

Examiner

Bentsu Ro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15 and 17-33 is/are rejected.
- 7) ☒ Claim(s) 4 and 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/26/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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FIRST OFFICE ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 7, 10-15, 17-23, 25, 28, 30-33 are all rejected under 35 U.S.C. 102(b) as being clearly anticipated by Schulte et al US Patent No. 4,956,592. (This reference was cited by applicant in the PTO-1449, mailed 1/26/2004.)

Claims read onto Schulte et al teaching as follows:

<u>The claims:</u>	<u>Schulte et al teaching:</u>
1. A method of positioning a patient support apparatus at a desired speed, comprising: receiving a load signal indicative of a load on the patient support apparatus; and	Fig. 1 shows a patient support apparatus (a podiatry chair 20), Figs. 5A-5C show a method and a control circuit for controlling the speed of the patient support apparatus; Fig. 5A shows a Hall sensor 121, the Hall sensor 121 outputs a load signal to the microprocessor 100 (Fig. 5B), thus, the microprocessor 100 receives a load signal indicative of a load on the patient support apparatus; it is noted that the Hall sensor 121 is coupled to the choke 161 (Fig. 5C) to sense the current of a base motor 61; the motor current indicates the load on the patient support apparatus;

driving a motor configured to move the patient support apparatus using the load signal.	Fig. 5C shows a base motor 61, the Hall sensor signal (121) is used to control the base motor 61 to move the chair 20.
2. The method of claim 1, wherein receiving the load signal further includes determining a voltage indicative of the load.	Fig. 5A shows a one-microfarad capacitor 229, the capacitor 229 is charged to a peak voltage value indicative of the load, see column 4, lines 25-28; applicant should note that all capacitors store energy in term of voltage and capacitance ($E = 1/2 CV^2$), not current; the peak voltage in the capacitor 229 indicates the average peak current level of the motor as shown in column 4, lines 25-28.
3. The method of claim 1, wherein receiving the load signal further includes determining at least one of a first voltage delivered to the motor, a current draw of the motor, ...	Figs. 5A and 5C show the Hall sensor 121 coupled to the choke coil 161 for determining the current draw of the base motor 61.
5. The method of claim 1, wherein driving the motor further includes comparing a determined voltage to a reference voltage.	Fig. 5A shows an operational amplifier 221 for comparing the voltage from Hall sensor 121 (at the non-inverting input of the op. amp. 221) to a reference voltage (at the inverting input of the op. amp. 221).
7. The method of claim 1, wherein driving the motor further includes correlating the load signal to a power level associated with the desired speed.	column 5, line 30 shows an equation: $S = -K_1C + K_2$; wherein the "C" is a load signal related to the motor current; the "S" is a power level associated with the desired motor speed.
10. The method of claim 1, wherein driving the motor further includes generating the load signal.	the output signal from the Hall sensor 121 is a load signal as explained previously.

11. The method of claim 1, wherein receiving the load signal further includes receiving at least one of :directional data indicative of a desired direction of movement of the support surface, a speed measurement, a voltage level and a patient weight.	TABLE I shows switch numbers 141, 142 for controlling the chair Up or Down, which is a directional data signal.
12. The method of claim 1, wherein driving the motor further includes driving the motor at the desired speed of a first period corresponding to a first portion of a distance traveled by the support apparatus and at a second desired speed for a second period corresponding to a second portion of the distance traveled by the support apparatus.	TABLE I shows a position switch 133 for moving the chair to a selected position 1; column 5, line 57 shows an equation for driving the chair to a position X, based on a timed interval; TABLE I further shows a position switch 136 for moving the chair to a second selected position 2.
13. A method of positioning a patient support apparatus at a desired speed, comprising: determining a voltage associated with an electric motor configured to position a patient support apparatus using a load signal indicative of a load on the patient support apparatus, wherein the load includes a weight of a patient;	Fig. 1 shows a patient support apparatus; the equation in column 5, line 30 shows a motor desired speed; the peak charge voltage at the capacitor 229, see previous explanation; it is noted that this peak charge voltage is associated the base motor 61; (the above-explanation is only one way of reading the claim limitation, the limitation may also read onto other part of the circuit); the charging current for the capacitor 229 comes from the Hall sensor 121; the signal outputs from the Hall sensor 121 is a load signal; see column 4, line 67;

comparing the determined voltage to a reference voltage associated with a desired speed to obtain a comparison result; using the comparison result to adjust a power level of a power signal supplied to the electric motor; generating a power signal comprising the power level; communicating the power signal to the electric motor; and positioning the patient support apparatus at the desired speed.	the peak charge voltage of capacitor 229 is output on line 233 to an A/D converter 106 (Fig. 6A) for digitizing the peak charge voltage at several different digitization levels (the digitized outputs); thus, the digitization is a process of comparing the determined voltage to a reference voltage; the digitized output is used for motor speed control; the microprocessor 100 (Fig. 5B) generates a power signal (a current and time for running the base motor 61); see equations in column 5, lines 30, 46 and 54; the microprocessor 100 communicates with the motor on cable 203; the motor is then driven to position the chair at a desired speed to a desired position.
14. The method of claim 13, wherein receiving the load signal further includes receiving a signal indicative of whether the patient support apparatus is to be at least one of lowered and raised.	switches 141 and 142 (Fig. 4) generate signals to move the based UP or DOWN, see TABLE I.
15. A method of positioning a patient support apparatus at a desired speed, comprising: receiving a load signal indicative of a load on the patient support apparatus; correlating the determined load to a power level of a plurality of store power levels, each stored power level of the plurality of stored power levels being associated with	same as explained before; see column 4, line 63 through column 5, line 2; it is noted that motor 61 is programmed controlled, because the motor current is

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a respective stored load value in a memory;	affected by the weight of a patient (see column 4, line 66-68), there should be several different current levels, therefore, there should be several different speed levels and power levels as well due to program control;
generating a power signal comprising the power level;	applicant should note that the program control is a discrete type of control, therefore, the control must based on different discrete levels;
communicating the power signal to an electric motor configured to initiate moving the patient support apparatus; and moving the patient support apparatus at the desired speed.	the A/D converter 106 (Fig. 6A) generates a power signal having different power levels;
	same as before.

Claims 17-23, 25, 28, 30-33 are basically similar to any one or combination of claims explained above. Duplicate explanation is deemed un-necessary.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 8, 9, 24, 26, 27, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulte et al in view of Wilson US Patent No. 5,764,024.

Regarding to these claims, Schulte et al do not specifically disclose how the motor speed is controlled.

In nowadays, most time motor speed is controlled via a pulse width modulation (PWM) or duty cycle control, see Wilson's abstract.

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In view of Wilson's teaching, it would have been obvious to a skilled person in the art to control the motor speed of Schulte's base motor 61 by using a PWM as taught by Wilson.

Then why using the PWM of Wilson ???

The PWM motor speed control is the most commonly used method because the power switch (a transistor, a FET, a SCR, etc) is available at a very low price. Most importantly, the PWM motor speed control can control the motor speed in a very wide range with a very precise motor speed.

5. Claims 4 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number (571) 272-2072.

10/13/2004


Bentsu Ro
Senior Examiner
Art Unit 2837